

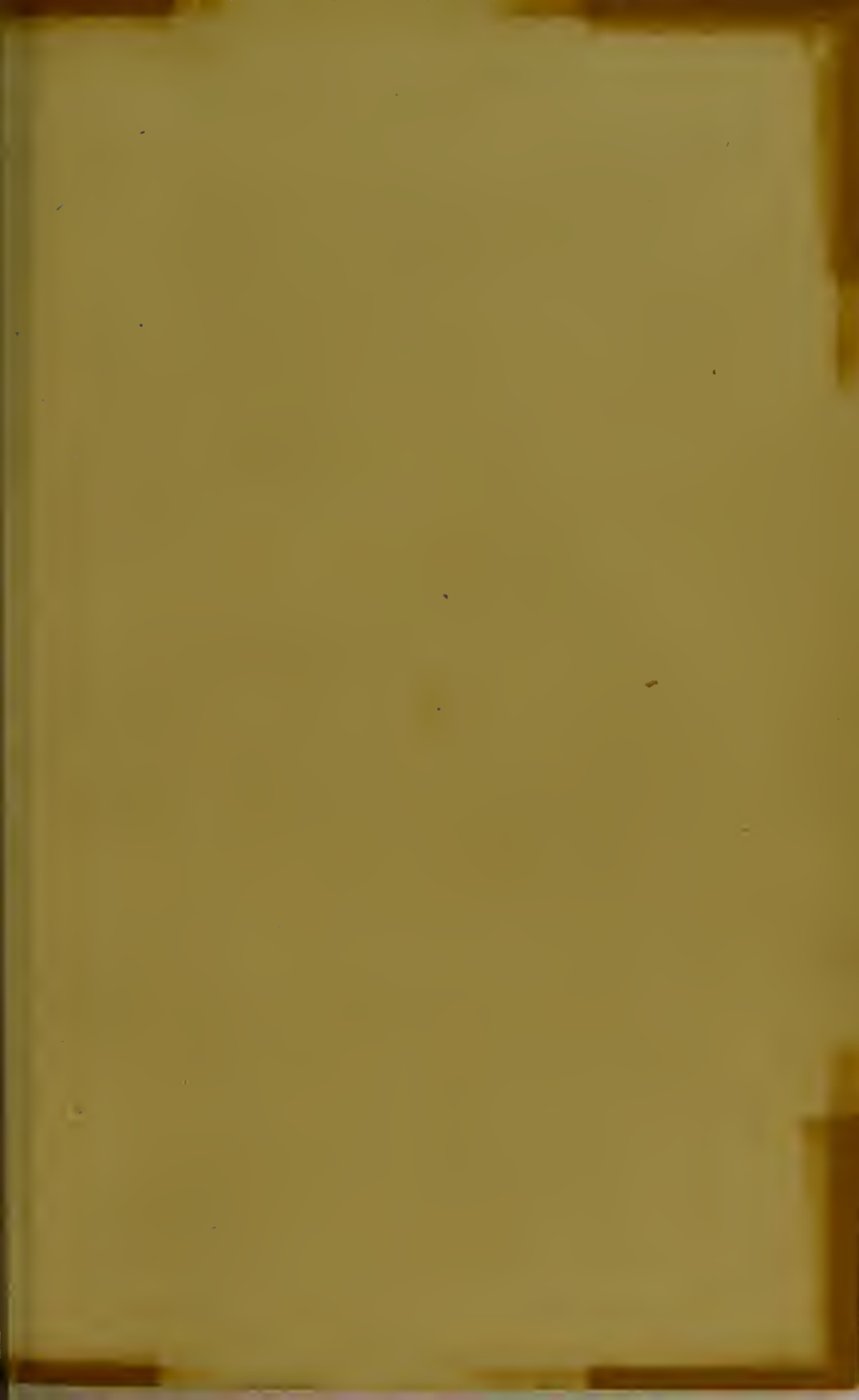
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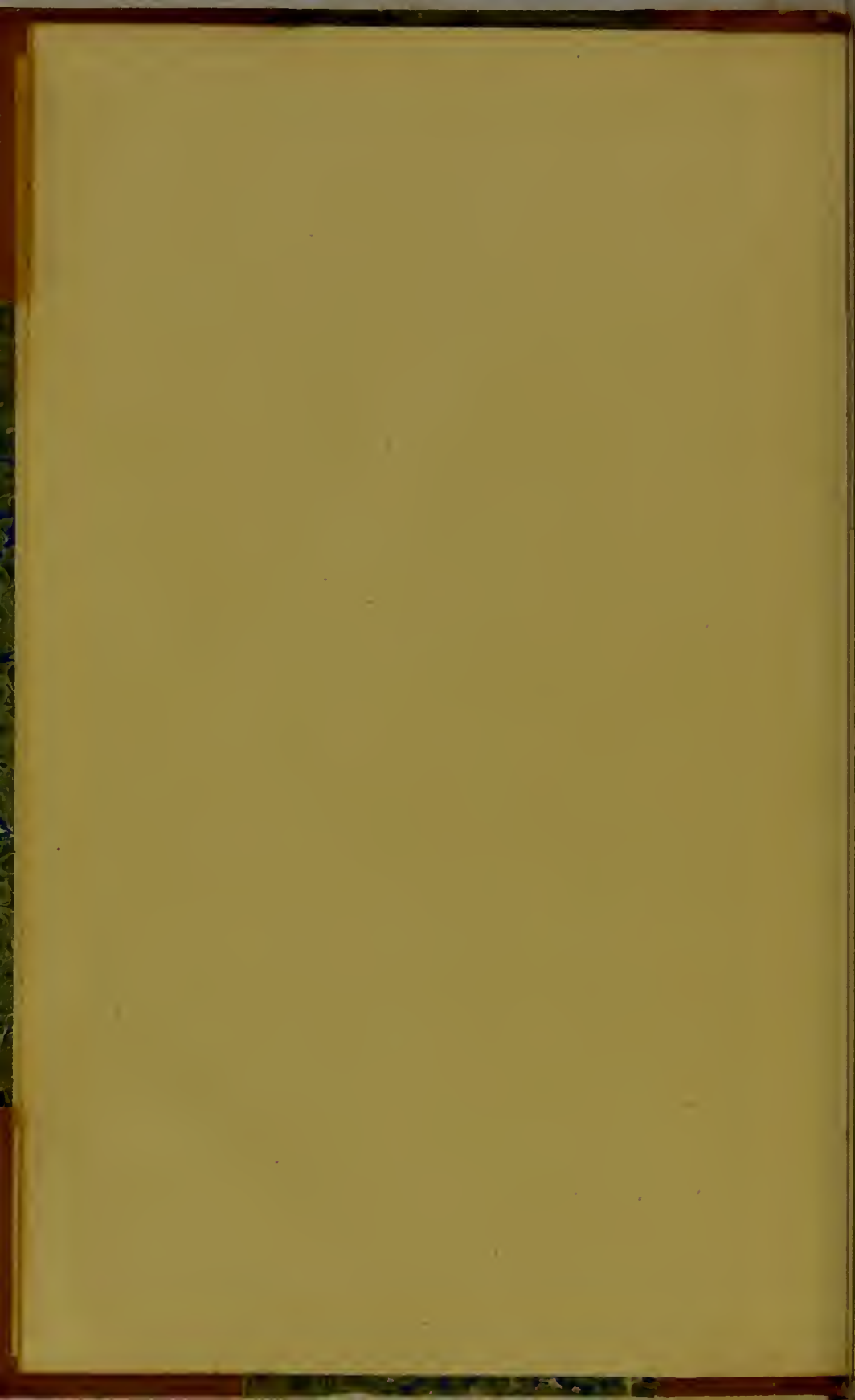
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ON MEDICAL PROGRESS.

In Memoriam

R. B. TODD.

“La médecine est un art dont les progrès sont en grande partie dépendants de ceux de la physiologie.”

MILNE-EDWARDS.

A LECTURE INAUGURAL TO THE COURSE OF PATHOLOGICAL ANATOMY,
DELIVERED AT KING'S COLLEGE, MAY 5TH, 1870.

ON
MEDICAL PROGRESS:

En Memoriam

R. B. TODD.

BY

LIONEL S. BEALE, M.B., F.R.S.,

Fellow of the Royal College of Physicians; Physician to King's College Hospital; Professor
of Pathological Anatomy, and formerly Professor of Physiology and of General and
Morbidity Anatomy in King's College.

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IN MEMORIAM
ROBERT BENTLEY TODD.

ITH every advance of knowledge, a further division of labour in teaching and working becomes necessary, and many subjects which were formerly comprised in a single course of lectures are distributed to distinct departments, and have to be treated of by several different teachers. Real progress in human knowledge is always marked by this increased number of labourers and increased division of labour; and an observer finds a life's work in devoting himself unremittingly to the advancement of a fractional part of a subject of which his predecessors undertook the whole. Without this division of labour there would have been no progress in science; and further important additions to our knowledge can only be made by those who, after a thorough scientific training and good general education, submit to concentrate their powers upon a limited field of inquiry, and employ their life in studying what to most persons must appear as an almost invisible speck in the firmament of knowledge.

In every particular branch of science the same process of expansion, involving further subdivision of work, has been going on, so that three or four subjects which were once comprised under one head, are of necessity distinguished and treated of separately. The same subdivision and multiplication of departments is proceeding in medicine as in every other branch of human knowledge. This is deplored, and despised, and scoffed at by some, advocated and encouraged by others. But whether it be promoted, or whether it be impeded, it is certain that it will pro-

ceed ; and since it becomes ever more necessary that the medical student should be well grounded in many departments of scientific knowledge, it is of paramount importance for him to receive instruction from an ever increasing number of teachers, or the teaching will be bad. Unless what we have to learn, more especially in the case of subjects which are advancing almost from day to day, be presented to us clear, and distinct, and living, as a thorough master alone can present it, instruction becomes a pretentious sham, and learning a dead formality. A great increase has taken place in the number of subjects which the medical student has to learn. This is inevitable, and it is good that it should be so. Surely, before men now advanced in the profession and wielding great authority deprecate the change and do their utmost to stop it, and to recur to a state of things for ever past, they should endeavour to take a calm survey of the existing state of knowledge, and look kindly upon those whose hopes and aspirations extend beyond their own. Though they undoubtedly possess great power and are able to restrain progress, they should hesitate before they determine to act, and contemplate dispassionately the current of active progressive change going on around, for, if stemmed here, it will only flow on with renewed vigour elsewhere, and the stream of intellectual labour and ambition which sets, at this time, not too strongly or too decidedly towards the London Medical School, will be diverted into other and more suitable channels, to a more congenial clime. Our great schools are quite alive to the state of things, and many of those who work in them are anxious enough to improve, extend, and to progress ; but those who possess the power to give effect to this desire lack courage, are alarmed at progress, and dread expansion. And so the monstrous absurdity is exhibited of a multiplicity of subjects being taught in our schools, while for passing some of our examining boards a knowledge of but two or three is required. Thus the student is taught by his examiners who can pass him or pluck him, to estimate highly or lightly, or as nothing, the several subjects which he is supposed to be taught at his school. Worse than all, the examining boards compel attendance upon courses of lectures on subjects which, not being included in the examination,

the examiners may naturally be considered to regard as useless or unnecessary. In this way, the teacher is discouraged, if not degraded, and the proper relationship between teacher and pupil is rendered impossible. How long the existing painful and inconsistent state of things is to last it is not possible to say, but it is to be hoped that Government will soon put an end to the anomaly of students being forced to pay teachers for teaching what examining boards do not require that they should know.

It is a fact that for many years past, the views of those who teach in our medical schools have been expanding at a much greater rate than the views of those who exercise authority over medical education. Teachers change, while examiners remain; and, indeed, it must be confessed that among the latter, at least in the case of the most popular board, are to be found but a small minority who have, for many years, contributed to the advancement of science and to that development of the continually advancing subjects, without which there can be no real progress in medicine. For this reason, therefore, but few of them really appreciate or believe in the necessity for gradual but unceasing change.

These remarks are particularly applicable to that subject which I have had the honour of teaching in this College for sixteen years. Physiology is recognised by everyone as the very foundation of medicine, and yet many of you know how slight an acquaintance with physiology will enable you to obtain a diploma to practise. In our great schools have been men who have devoted themselves earnestly to the study and advance of this important subject, but how infinitesimal is the influence they have been able to exert upon medical education. Is it not most extraordinary how lightly physiology is estimated by those in power in the medical profession? Nothing indicates this more decidedly or more painfully than the fact that out of seven sections to be comprised in the new Royal Society of Medicine there is not one devoted to physiology, nor is the word physiology, or biology, or histology, or minute or general, or other kind of anatomy mentioned in the scheme from one end to the other—a Royal Society of Medicine in which anatomy is ignored and physiology holds no place whatever! What would Harvey, and Hunter, and Bell,

and Baillie, and Astley Cooper, and Brodie, have thought of the proposal?

Comparative anatomy is looked upon more coldly even than physiology. At this very time, I hear, there is great difference of opinion amongst those who preside over the most splendid museum of comparative anatomy in the world, as to whether it is desirable or not that a medical student should be acquainted with the elements of comparative anatomy. One would feel inclined to ask rather if every one of us, man, woman, and child, in every station of life, ought not to know something of the living beings by which we are surrounded, many of which are in so many ways of such importance to us, and with all of which we have so much in common. How can anyone learn physiology without knowing something of comparative anatomy? To treat properly of the function of respiration or of circulation without referring to the breathing and circulating organs of a number of the lower animals, is not possible. But is it not a disgrace to anyone to be utterly ignorant of the differences between a whale and a fish; not to know something of the way in which plants and animals live; how a worm differs from a caterpillar; what changes occur in the development of a butterfly or a moth, or how the foot of a horse differs from that of a pig, a bear, or a dog? Surely all medical students, and indeed all men now-a-days, ought to know such things as these.

But, as I have said before, physiology has expanded enormously of late years, and is expanding fast, and demands a continually increasing number of earnest investigators. The subject of physiology used to be treated of in the anatomical course, but it has long been detached, and is now undergoing further division. Although in Edinburgh, towards the end of the last century, separate courses of physiology were delivered by John Allen and his successors, in most schools the consideration of this subject fell to the province of the teacher of anatomy. Herbert Mayo, the first professor of anatomy in this College, taught physiology; and it was not until 1836 that a division in the duties was made, and my colleague, the present professor, became lecturer on descriptive and surgical anatomy.

The talented author of the *Outlines of Human Physiology*, published

about the year 1825, was a great anatomist, a good draughtsman, and an elegant writer. In 1843, he gave an introductory lecture in which he deplored the tendency in that day to disparage the cultivation of classical literature, and to despise the study of the languages of ancient Greece and Rome. After having held the Chair of Physiology for a very short period (I am not sure whether he delivered any lectures), Herbert Mayo was succeeded by Robert Bentley Todd, to whom many of the present teachers of this College, and many more who are teaching and labouring usefully elsewhere, are indebted for what they know of physiology, and for much more besides.

Dr. Todd was in the habit of alluding in his lectures on physiology to morbid changes; but for many years past it has been necessary to divide the course of physiology and general and morbid anatomy; and I have given a distinct course on morbid anatomy during the summer session. When last year I found it necessary to resign my professorship of physiology, the Council of the College considered it desirable to institute a new chair of Pathological Anatomy, of which I have the honour to be the first occupant. It is a source of pleasure and satisfaction to me that the most important part of the labours of the Chair I held for sixteen years have been committed by the Council to my friend Dr. Rutherford, who so admirably fulfils the duties of Professor of Physiology in this College.

Although it is very gratifying to me to be able to state that this Chair has been divided into two distinct professorships, I had hoped to be able to record, long before this, a further subdivision. Microscopic anatomy might well have been separated from physiology proper, while physiological and medical chemistry is worthy of all the attention and devotion a separate professor could give to it. Before I was elected a Professor in King's College I was well aware of the enormous importance of the study of minute anatomy and physiological chemistry; and many of the earlier years of my life were mainly employed in the prosecution of these subjects in a private laboratory adjoining the hospital, which I had fitted up for the purpose, and where I gave many courses of lectures and demonstrations. When I became professor, I confess I looked forward

with great confidence to the time when a large laboratory for the study of physiological and pathological chemistry, and workrooms for thorough microscopic teaching, would be attached to the physiological department of King's College. I had hoped that, before the time came for me to resign my Chair, my little laboratory and workrooms in Carey Street would have been superseded by splendid workrooms permanently established here, and I had visions of two or more professors and several demonstrators engaged in thorough practical work—teaching the several branches of physics, chemistry, and minute anatomy, human and comparative, healthy and morbid, upon which the medicine and surgery of the future are being founded. But these hopes of mine have not been realised. I have worked hard and done my utmost to carry them into effect, because I knew that if I could succeed I should have helped in some measure to advance the true interests of British medical science. Had these arrangements been carried out, a great impulse would have been given to the scientific investigation of disease, a greater number of highly qualified teachers and new investigators would have sprung up in our own school, and many new and highly important facts would have been added to science. But my dreams were to remain but dreams. However, I do not despair of seeing some day erected in London physiological laboratories and microscope-rooms, where the vast and ever-growing work demanded for the proper elucidation of those many subjects bearing upon the nature and treatment of disease may be successfully carried on by competent workers.

Purely scientific work of this kind is opposed by many, probably because it does not seem to pay. Too seldom, no doubt, is any kind of real progressive work found to pay the most meritorious worker. Hence some authorities, high in the position they hold in this practical country, seem inclined to look coldly upon men who perform work for which there is no demand, and which cannot be estimated as worth so many shillings or pounds. Workers who work for the work's own sake are too often regarded as unpractical enthusiasts, and looked upon as tiresome useless creatures in the body politic, who take up space which could be better occupied, and who seem to live but to vex the spirits of the well-to-do and well-satisfied by

their continual striving after that of which no one but themselves has any conception, and which, if obtained, only serves to make them more restless, and to excite in them a demand for more of this unsatisfying knowledge. It is, however, in great measure, unpaid work which has made England what she is. It is, for the most part, by the unpaid work of unmercenary enthusiasts that every branch of science is advanced; and it is to this very work that all the practical arts now so highly developed are mainly indebted for their progress. It is well indeed that men should work that they may live; but is it not to be permitted to anyone to desire to live in order that he may continue to work on? The struggle to be having been surmounted, is he alone a wise man who forthwith enters upon a never-ending struggle to gain and to accumulate?

I suppose that at this time it would not be possible to suggest a mode of expending good money which would be more ridiculed, than the proposal to build scientific workrooms and provide for carrying out purely scientific work in connection with the study of disease. The idea of devoting a large sum of money to buildings and fittings, and appropriating £5,000 or more a year for researches and for the publication of the results, would not be listened to for a single instant in the City; and yet it would be difficult to point out a more thoroughly profitable investment. The health gained, the lives saved, and the new discoveries which would lead to practical improvements in various ways, would be worth hundreds of thousands of pounds in a very few years. The shrewd practical man of these days thinks nothing of investing his tens of thousands in enterprises of which he knows nothing, which *may* pay, but in which he may, and very often does, lose all. The philanthropic man devotes thousands to the relief of suffering, and to the supply of want; but if anyone were to submit to either the wisdom of devoting a few thousands to scientific work, unless it were for experiments connected with warfare, he would run some risk, I fear, of being regarded by both as a knave or a madman. Nor would such an expenditure, to judge from much we see and hear and know, be regarded with much greater favour by the profession itself.

To many, the work and teaching I am advocating appear unpractical

and unprofitable, as of no present utility, and of doubtful advantage in the time to come. Acting as if this position were incontrovertible, some who occupy even high place in the profession very seriously underrate the importance of scientific inquiry, discourage investigation, and endeavour to divert the energy and intellect of the day into other channels. Far different, however, were the views and acts of Todd. This great friend of medical science and progress laboured vigorously and incessantly to advance medical work, to raise the College he loved so well as a place of medical education, and endeavoured to encourage his pupils, in every way in his power, to press forward into the very centre of the stream of active work and thought. For these reasons, therefore, I have long desired to speak of him in this place. And now that ten long years have passed since he ceased to labour amongst us, we should be able to form a calm and, I trust, a true estimate of the good work he did. It will, however, be said that my judgment is partial, and this is true, for I was taught by him; but there will be found very few of his pupils who really knew him who are without the failing which I am obliged to acknowledge. Todd was a man who was ever moving onwards, and therefore he was accused of restlessness, and regarded by some as a disturber of peace, and too fond of change. But is progress without change possible? In those scientific subjects which promote the advancement of medicine, frequent changes are indispensable. The development of new work and new thought necessitates new workrooms and great expense, new modes of teaching and generations of teachers different from the former school. How can this be carried into effect without frequent and serious changes? Constant progress involves constant change, short periods of service, and limited tenure: these things can never be popular.

Todd himself acted according to the rules which he desired should influence the conduct of others. While he held place, he did the utmost he could to advance the work in which he was engaged, so that when he left the post empty it should be better worth filling than when he was called upon to occupy it. The hypercritical censoriousness of these days may possibly lead some to suggest that mere self-interest is sufficient to account for

such a course of action. By working energetically and by doing his utmost, it is certainly true that a man may advance his own interests and help himself onwards. But is it more to be desired that he should perform the work committed to his care in a slovenly careless manner, so that he may be successful in escaping the accusation of endeavouring to advance himself? Modern criticism would be far more useful than it is to those who work at science and to the public who desire to know the result of their labours, if the work itself were examined and criticised, and the men who did the work, or the motives which directed them, were less considered. Todd, like many others, suffered somewhat at the hands of hostile critics. It could hardly have been otherwise, for his views were sometimes much opposed to those current at the time, and often directly at variance with the doctrines taught by his contemporaries; while some of his acts were so generous and disinterested that a sharp far-seeing critic was sure to attribute them to some judiciously concealed selfishness. But, after a time, motives cease to be discussed, differences are softened, and questions which were hotly contested many years before become altogether removed from the regions of doubt and controversy. Let me now tell you, in few words and as plainly as I can, what I have been able to learn concerning the work of my master, colleague, and friend; and would that I were able to perform my task half as well as I know it might have been performed by others.

Robert Bentley Todd was one of a very large and well known family in Dublin, in which place his father, who died at the early age of 44, universally loved and respected, had for some years been a teacher of surgery and had practised as a distinguished surgeon. Several members of Dr. Todd's family have attained eminent positions in various departments of learning. Dr. Todd was born in April 1809, and was educated in Trinity College, Dublin. Intending to practise as a surgeon, he passed the College of Surgeons of Dublin in 1831. In the same year, he visited England, and took an *ad eundem* degree at Pembroke College, Oxford. Having been led to abandon the idea of surgical practice, he graduated in medicine, and came to London, when he was 23 years old, to commence his career as a physician and public teacher in

this city. He took the licence of the Royal College of Physicians in Feb. 25th, 1833, and was made a Fellow of the Royal Society in 1838. Dr. Todd soon became connected with the Aldersgate Street School of Medicine, where for two or three years he taught anatomy. In 1836, at the early age of 27, he was elected to the Chair of Physiology and Morbid Anatomy which had just been created in King's College.

As a Lecturer on Physiology, Dr. Todd was accurate and clear in his statements, and excited the interest of his pupils in what he had to teach. He had a happy knack of putting before his hearers the broad essential points of a question, and keeping the attention directed to these, not by repeating what he had already said, but by recurring to the main facts from time to time, and using these for illustrating new points. His language was good and his manner quiet and deliberate, without ever being tedious. His class was always well attended; and many of the old students used frequently to come to hear him. The subject which he probably taught with the greatest success, and which he himself liked best, was Innervation. His exposition of the anatomy of the brain and nervous system was always remarkably good; and he dissected the brain and exposed the various parts with great skill. After lecturing with great success for twelve years, at his express desire, his friend and coadjutor, William Bowman, was associated with him as co-Professor in the year 1848. Todd and Bowman took different parts of the course—Dr. Todd lecturing on Digestion, Respiration, Circulation, and the Brain; while Mr. Bowman took minute Structure, the organs of the Senses, Secretion, and Generation. But this division was by no means strictly adhered to. The Chair was filled by these two distinguished teachers for five years. In 1853, Dr. Todd was compelled, by increasing practice, to resign his Chair; and I had the good fortune to be elected as Mr. Bowman's colleague, a position which, however, I only enjoyed during two years, for circumstances similar to those which had led to Dr. Todd's resignation had at that time necessitated Mr. Bowman's retirement. I continued to hold the Chair until last year, when my friend, Dr. Rutherford, was appointed to succeed me. It would not be uninteresting if I could give here a brief history of physiological work during the

last thirty years, in which my colleagues have performed so important a part ; but this would occupy too much of our time and carry us away somewhat from the special object of this lecture : I revert, therefore, to the subject of my memoir.

In 1838, being warmly supported by many friends of the College, among whom may be mentioned the names of William Moody, T. G. Sambrooke, and Robert Cheere, Dr. Todd took a very active part in establishing King's College Hospital, and for some time performed the duties of Honorary Secretary in that Institution. Here for twenty-two years he carried on the work of a clinical teacher, and soon became distinguished for accuracy in the observation of disease, correctness of diagnosis, remarkable clearness and exactness in expressing his views, and for judicious treatment.

Dr. Todd was, in truth, a physiological physician. It has been well remarked by his dearest medical friend that "he looked on all diseases as one thoroughly conversant with the several avenues and processes of the body deranged by it, and was thus enabled not only to see comprehensively, and to teach decidedly, the phenomena before him, but with all the energy of a wonderfully active mind to take a leading part in moulding the theories and practice that were current in his youth into conformity with the requirements of an epoch in which physiology has made greater strides towards the perfection of a science than in all former periods combined. He did not look at diseased processes merely as such, but at disease in contrast with health ; and he had the courage to write and teach fearlessly the conclusions to which he was led, but always with simplicity, honesty, and candour." Dr. Todd was one of the most popular clinical teachers of his day ; and no one produced in the minds of the majority of his pupils a stronger conviction of the truth of the doctrines which he advocated. Few teachers have had the satisfaction of seeing so large a number of their pupils pursuing a life of usefulness and distinction, and no master ever took a greater interest in the success of those he taught.

Dr. Todd was mainly instrumental in establishing, in 1848, with the warm co-operation of the Bishop of London and under his President-

ship, St. John's House and Sisterhood for the training and employment of nurses for hospitals, the poor and private families, and took the warmest interest in its progress up to the time of his death. This Institution supplied Miss Nightingale "with some of that first devoted band which left England for Scutari in October 1855." Dr. Todd's colleague, Mr. Bowman, has also long been on the Council of this Institution, and has devoted himself earnestly to its welfare; and a later occupant of the Physiological Chair has, though in a more humble way, endeavoured to assist in promoting the success of St. John's House, and has been for some years its Honorary Secretary.

Dr. Todd took an active part in placing the nursing of King's College Hospital in charge of the sisters and nurses of St. John's House. With many other physicians and surgeons, he had long felt the many evils connected with the old system of hospital nursing, and had long aimed at introducing improvements in that department. The night nursing in our Hospital up to 1856 was not satisfactory, and the persons to whom this responsible office was committed were in too many instances utterly unqualified for the work. The objections urged against the proposed plan were answered in a letter to Mr. Sambrooke, who was at that time Deputy-Chairman of the Committee of the Hospital, and also a member of the Council of St. John's House. Many difficulties had to be overcome, and fears were entertained that the plan would not succeed; but at length it met with the approval of the authorities of both Institutions; and in May 1856, the Lady Superior of St. John's House, with a staff of nurses, entered King's College Hospital. Since this time the nursing department has been conducted most efficiently, and the change has benefited both institutions. You must all have been frequent witnesses of the unremitting care and devotion towards the sick displayed by our sisters and nurses. The nursing department of Charing Cross Hospital, and the Galignani Hospital, Paris, are now conducted by the sisters and nurses of St. John's House. The Institution has a permanent home in Norfolk Street; and it is hoped that the staff will be still further increased so that they may undertake more extended duties, and thus spread over a continually increasing area the priceless blessings this institution was designed to bestow.

Dr. Todd's contributions to medical science were numerous, and he was the author of several well-known works. In the *Transactions* of the Royal Medical and Chirurgical Society and the medical journals from 1833 to the year 1859, will be found reports of clinical lectures, papers, and original memoirs. In 1843, his treatise *On Gout, Rheumatic Fever, and Chronic Rheumatism of the Joints*, was published; but the first great literary work with which his name was associated was the *Cyclopædia of Anatomy and Physiology*. This important and comprehensive cyclopædia was commenced in 1835: many of the articles were contributed by the ablest men in their respective departments; and from the amount of original matter they contain, and the number of new drawings with which they are illustrated, they may be regarded as distinct monographs upon the subjects of which they treat. As the work proceeded its reputation increased; and the last of the five large and closely printed volumes, containing altogether nearly 5000 pages, was only completed a year before the death of its zealous and indefatigable editor. This cyclopædia has done more to encourage and advance the study of physiology and comparative and microscopic anatomy than any book ever published.

In February 1843, the first part of the *Physiological Anatomy and Physiology of Man* appeared. In this work Dr. Todd was associated with his intimate friend and pupil, William Bowman. It is not too much to say that this treatise formed the model upon which many subsequent works on anatomy and physiology published on the Continent were constructed; and its influence in promoting the study of physiology in connection with medicine can hardly be overrated.

Dr. Todd contributed a memoir upon the "Anatomy of the Brain, Spinal Cord, and Ganglions", as well as several important papers on the Nervous System; and for many years he devoted much attention to the investigation of this class of diseases. In the Lumleian lectures before the College of Physicians in 1850, he showed that many cases of delirium and coma were to be explained upon the supposition of blood-poisoning, and strongly advocated the idea that these conditions were often entirely of humoral origin, and did not depend upon any lesion

of the central organs of the nervous system. These conclusions naturally led to the adoption of a plan of treatment very different from that then generally followed; and many cases which by some practitioners would have been depleted, were by him put upon a supporting plan of treatment. The effect of these views upon the profession has been great; and many cases of paralysis which years ago would have been largely bled and subjected to the influence of low diet and lowering remedies, are now treated by tonics, and even by stimulants. It has been clearly shown that the effusion of blood in the brain immediately results from the giving way of weak vessels, and not from an increased rush of blood to the part, or from any inflammatory process; the weakness of the capillary walls depending upon an abnormal condition of the blood, and consequent imperfect nutrition, which has probably gone on for a period of many years.

Dr. Todd published three volumes of clinical lectures, the first *On Paralysis, Certain Diseases of the Brain, and other Affections of the Nervous System*, in 1854; the second *On Certain Diseases of the Urinary Organs and on Dropsies*, in 1857; and the third volume, *On Certain Acute Diseases*, was only completed a month before his death occurred. The fifty lectures, with reports of more than two hundred cases, comprised in these three volumes, were afterwards collected into one large volume by myself. This was published early in 1861.

Dr. Todd always took a warm interest in medical education, and was one of those who held "that the duties which devolve upon the medical profession are such as to render the religious and moral character of its members not less important than their practical and scientific attainments." This was the principle introduced by the founders of King's College; and no one believed its truth more steadfastly, or endeavoured to carry it into practice more earnestly, than Dr. Todd. Long ago he endeavoured to remove many of the difficulties which beset the medical student on his first coming to London; and in a letter to the Principal in 1842, strongly advocated the extension of the collegiate system to students of this department.

From a very early period of his life, Dr. Todd endeavoured to in-

crease the intimacy of the relationship between student and teacher, and warmly supported every attempt to render teaching more efficient. He objected to increasing the number of lectures, and urged the importance of making the teaching more *direct* in its character, so that the student might be encouraged to see and observe and think for himself. No one was more alive to the serious defects existing in connection with medical education than Dr. Todd. He endeavoured to remedy them to the utmost of his power; but the most serious were unfortunately irremediable then, and not a few remain uncorrected even now. Little has been done and little can be done until some decided change like that proposed in the present Government Bill has been actually carried, and a number of the absurd restrictions which press heavily upon teachers and students removed completely. Good general examinations year after year during the period of studentship, conducted by examiners appointed for limited periods, whose knowledge has been acquired within a quarter of a century of the period when they examine, is really all that seems to be required. If this were established, all registration formalities and compulsory attendance might be swept away, for the student would soon find out for himself how he could most efficiently study the various subjects of which he would be compelled to show that he possessed a competent knowledge.

It is in connection with very striking alterations in medical practice that the name of Todd will long continue to be associated. Principles of treatment which, but a few years ago, were considered incontrovertible as the facts on which they were based, have of late years been shown to be erroneous, and have been totally abandoned, while the fundamental facts upon which they were supposed to rest have been controverted. Medicine has long been undergoing a progressive change; and as long as science continues to advance, our views concerning the nature of disease will continue to change. As our means of observation become more exact, new facts are added to those already discovered, and by degrees new general principles are developed. This progressive change, now so inconsiderable as to escape notice, now so excessive as to alarm, constantly accompanies advancing in-

formation; but in no branch of human knowledge is it more remarkable than in the healing art. Every earnest man who studies his profession for its own sake, assists in effecting change and promoting advancement; and although few, indeed, even of those who possess the gift of great natural powers, live long enough to see the improvements in practice which result from their own scientific researches being carried into effect, actual progress is sure.

Nothing is more interesting than to study the wonderful alterations which have taken place in our views concerning the nature and treatment of important general pathological changes. The process called inflammation lies at the root of most of the disorders—acute and chronic—from which man and the higher animals suffer. The nature of inflammatory action is, as it were, the point round which medical theories revolve, and differences regarding the nature of the phenomena comprised under inflammation have led to divisions in the profession upon the most important practical questions, and caused the greatest differences regarding the proper treatment of disease. Inflammation is a subject which always excites intense interest, and even now cannot be discussed without much feeling. The calm favourable to the steady prosecution of scientific discovery is sometimes disturbed by the vehemence and warmth of the debate upon the proper interpretation of the facts.

The term inflammation involves increased action; and in all inflammations it is true that there is increased action. In order to combat this undue action and reduce the burning activity of the inflammation, we used to be taught to give remedies which depressed the heart's action and reduced the strength. But there are many forms of inflammation which are only seen in systems already reduced and exhausted by disease, misery, or privation. There are, indeed, many cases in which frequency of pulse, violent delirium, extreme prostration, and all those symptoms known to accompany extensive inflammatory action, seem certainly to depend upon a state of system which can hardly require lowering. Nevertheless, with such confidence was the truth of the old combustion theory of inflammation believed in, that the efforts to quench the fire or to moderate its intensity so absorbed the attention

of the physician as to endanger the loss of the patient before his efforts employed to check the disease could prove successful. Oftentimes have facts been explained by theories which had never been deduced from experiment; and when new facts opposed to a theory had been observed, men have sometimes said the facts could not be true, and continued to act upon the theory, while they appealed to the dogmas upon which the theory was based to confirm them in the action they had already determined to take. Stimulants had from time to time been given by intelligent doctors, in low conditions, accompanied by local inflammations; and in many cases when the patient felt better after taking wine, practitioners in bygone days have even allowed a repetition of the practice, although they felt conscious it was against what were regarded by them as sound principles of treatment, and which they dared not doubt. The favourable action was therefore explained by the discovery of some idiosyncrasy or peculiarity in the constitution of the patient, instead of being attributed to changes consequent upon the action of the stimulant in a particular abnormal state.

By degrees, however, it came to be observed that stimulants seemed to act favourably in very many cases in which their administration was quite opposed to theory, and was in antagonism with the doctrines then taught; and at last it was admitted that experience was to be trusted, and that the doctrine formerly taught must be given up. Still more recently, scientific observation and experiment have demonstrated that the facts have been completely misinterpreted and misunderstood, and that a plan of treatment at variance with that formerly popular and in harmony with that now followed out was really indicated. No one would now object to the exhibition of stimulants *because* some kind of inflammation or local fever is present; and in fevers, which are in reality but general inflammations, the pulse has been observed by hundreds of practitioners to diminish in frequency, wild delirium give place to calm consciousness, and the feverish state cease while the patient was taking stimulants. Forty years ago, such conditions would have been treated by bleeding, calomel, antimony, and lowering remedies.

Dr. Graves of Dublin, who, like Todd, had been a teacher of phy-

siology, advocated as long ago as 1833 a supporting plan of treatment in cases of fever; and a similar plan had been carried into practice by Dr. Blakiston, during the epidemic of influenza, at Birmingham, about the year 1837 (*Clinical Observations on Diseases of the Heart*, etc., p. 13). But it was reserved for Dr. Graves' pupil, Todd, to carry out this supporting plan of treatment to its fullest extent, and to apply it more generally. In his farewell lecture to the class of physiology in 1853, Dr. Todd thus expresses his obligations to Graves, the distinguished physician and physiologist. "From him I first imbibed a taste for physiological inquiry; and, under his guidance and direction, my first studies upon that subject were pursued. How much more should I have rejoiced to make this public acknowledgment, as I have often done privately, were my friend able to hear it. But, alas! this day's post has brought me the sad intelligence of his too early removal—no longer ago than at noon yesterday (March 20th, 1853)—from science and from a large circle of sorrowing friends. No physician ever earned a high reputation more justly and more honourably than did Dr. Graves; no man bore himself more correctly in all the relations of life; and, from the narrative of an intimate friend, no man ever quitted life with a calmer resignation to the will of God, or a more thorough reliance on all that the Christian holds most dear."

During many of the earlier years of his life, Dr. Todd treated cases of acute disease like most practitioners of that day; and in his oldest case-books are records of cases of acute pericarditis which were bled and treated with mercury to salivation; cases of pneumonia which were treated by bleeding and tartar emetic; cases of fever in which a supporting plan was very diffidently and very imperfectly carried out. Slowly and gradually his treatment was much modified; and at length he became a strong opponent of the doctrines upon which the so-called *proper treatment* of inflammatory action was supposed to be based. Pericarditis and peritonitis were treated with opium without the mercury; stimulants were given, and the lancet was completely laid aside. Pneumonia was combated by counterirritation and soothing poultices, and the skin and kidneys were made to act freely. The strength was sup-

ported; nourishing food was given; and, if the powers of the patient flagged, brandy was administered; at first in small doses, but in many low cases it was increased to considerable quantities. Desperate cases of low fever and inflammation were treated with large quantities of stimulants, the amount being varied from time to time according to the symptoms present and the progress of the case; but the proportion was not fixed according to any inflexible or arbitrary rule.

Much objection was made to the amount of stimulant given; but the arguments advanced against the system pursued have been satisfactorily answered. It seems never to have occurred to some, who have not hesitated to state the exact quantity of alcohol, which in their opinion should never be exceeded in any case, that an amount which might be excessive if given to a person weighing six stone, would be but a moderate dose, and perhaps insufficient, in the case of one weighing three times as much. In this matter it is wonderful that people who pride themselves upon being practical, instead of allowing themselves to be influenced by facts and reason, should act as if every individual were exactly alike, and had been cast in the same mould. The same erroneous view seems to be acted upon in the regulation of the quantity of food for prisoners, the inmates of workhouses, hospitals, and charitable institutions: uniformity is adopted in the distribution of food as if every individual required precisely the same quantity. The consequence is that a diet which is low for some is more than sufficient for others. Some will be half-starved while others will be well fed—perhaps over-fed. Under the uniformity system it is clear that, to the little people and the light weights, is accorded a very unfair advantage in the struggle for existence. It is of some importance for the physician, among other particulars, to take carefully into his consideration, when prescribing and regulating the proportion of food and stimulant, the weight and vigour of the individual patient. For although it is true that in proportion to their weight, small animals require much more food than large ones, a heavy man should, as a general rule, have a more liberal diet than a light one; and in apportioning the quantity of stimulant to the sick, this fact must not be neglected. But it must at the same time

be borne in mind that by habit and other circumstances some persons have been led to take, and hence require, a larger proportion of food and stimulants than others of the same weight.

In low diseases, the quantity of stimulants required during a short period may be very large; indeed, the patient's life seems sometimes to depend alone on the frequent doses of alcohol (occasionally as much as an ounce or even two ounces an hour) which are poured into the blood; and it is remarkable that as long as the case does well, the stimulant seems to be assimilated almost as fast as it is introduced into the stomach: a little escapes in the urine, in the breath, and perspiration, but by far the larger portion is used up in the system, and in two or three different ways helps to keep the patient alive at a time when the disease places him in the greatest jeopardy.

Alcohol has been given in many forms—wine, brandy, whiskey, or other spirits, with water; or as spirits of nitrous ether, pure spirits of wine, and spirits of camphor, combined with medicines. The patient need not know that he is taking a stimulant, if the friends inform us that he would rather not be told. Some persons do not object to take alcohol as a medicine, although they prefer to remain in ignorance of the fact that they are actually taking it at all.

The result of the system of treatment pursued by Dr. Todd was found to be that in severe cases of acute disease, the period of convalescence was much shortened; in cases necessarily fatal, life was prolonged; and it is believed that many desperate cases of low fever, pneumonia, acute rheumatism, etc., have been saved. After the lapse of some years of observation, Dr. Todd laid before the profession an account of the general principles of the treatment. His observations were illustrated by the records of numerous cases. In the last of his three volumes of clinical lectures devoted to cases of acute disease, Dr. Todd thus expresses himself: "That the notions so long prevalent in the schools, that the acute disease can be prevented or cured by means which depress and reduce vital and nervous power, is altogether fallacious. That disease is cured by natural processes. Remedies, whether in the shape of drugs which exercise a special physiological influence on the

system, or in whatever form, are useful only so far as they may excite, assist, or promote, these natural curative processes."

Now some have fallen into the error of supposing that Dr. Todd ordered large quantities of stimulants in every case. He has been accused of giving brandy in a routine manner. But it was a grave mistake to conclude that he did so. Mild cases of fever and inflammation were treated by him without stimulants altogether, or with very moderate quantities. But as Dr. Todd was naturally desirous of treating as many desperate cases as possible, a very large number of the worst forms of acute disease admitted into the Hospital were placed under his care. The curious argument was adopted by some, that because very large quantities of alcohol were administered in some exceptional cases, equally large doses were given in all cases. Dr. Todd was by many very unjustly accused of indiscriminate stimulation, and many hard and unjust things were said of him; but these are, or will be, forgotten.

The question of stimulation is one which has not always been considered upon its merits only. The zealous opposition to a particular practice upon religious, political, or moral grounds, may, without due care upon his part, quite unfit a man for the investigation of the effects of that practice upon the tissues of the living body under the varying circumstances of health, disease, climate, age, rest, anxiety, labour, etc. No persons feel more strongly than do many practitioners of medicine the importance of taking little or no stimulant *in health*; but in disease it need scarcely be said, the physiological changes in the body are completely altered, and many things which would be injurious in health may be taken with the greatest advantage. We must not, therefore, allow ourselves to be too much influenced by those who affirm that under no circumstances whatever should any alcohol be given to a human being.

More recent research has shown us how the beneficial action of alcohol in very bad cases of disease may in some measure be explained scientifically. In very low states of system the albuminous matters are fast escaping from the blood, the blood corpuscles are undergoing rapid

disintegration, and the *living matter or bioplasm* of the vessels, of the neighbouring tissues, and of the blood is growing very quickly. Now, alcohol tends to modify all these phenomena. It reduces the permeating tendency of the serum; it checks the disintegration of blood corpuscles; it prevents the rapid growth of living matter; and interferes with or modifies chemical changes taking place in organic fluids. When these changes are proceeding very rapidly, the capillary circulation beginning to fail, the heart's action becoming very weak and fluttering, and the strength ebbing fast, alcohol may save life. I shall venture to repeat here the conclusions I arrived at many years ago; and I may say that increased experience has afforded further confirmation of the correctness of the statements made in the paragraphs below. I do not, of course, refer to slight cases of fever, pneumonia, etc., in which no stimulant whatever may be required, but to *very severe cases of disease* only.

1. In what appeared hopeless cases, as much brandy as the patient could be made to swallow (an ounce and a half to two ounces in an hour) has been given for several hours in succession, and then as much as thirty ounces a day for several days, not only without producing the slightest intoxication, vomiting, or headache, but the treatment has been followed by recovery.

2. I would adduce the fact that a man not accustomed to drink, when suffering from acute rheumatism, complicated with pericarditis with effusion, pneumonia at the base of one lung, and pleurisy on the opposite side, has taken twenty-four ounces of brandy a day for eleven days; the tongue being moist and the mind calm during the whole time. While under this treatment, inflammatory products were absorbed, and the general state of the patient much improved.

3. I have been compelled to give a very weak child, weighing less than four stone, twelve ounces of brandy a day for ten days, while suffering from acute rheumatism with pericarditis and effusion. This quantity did not produce the slightest tendency to intoxication, or exert other than a favourable effect upon the disease.

4. I would state that, among the general conclusions I have arrived

at after carefully watching more than one hundred serious cases of acute disease treated with large quantities of stimulants, are the following :—
That intoxication is not produced,—that delirium, if it has occurred, ceases, or is prevented from occurring at all in the course of the case,—that headache is not occasioned,—that the action of the skin, kidneys and bowels goes on freely,—that the tongue remains moist, or, if dry and brown, often becomes moist,—that the pulse falls in frequency and increases in power,—that respiration is not impeded, but that, where even one entire lung is hepatised, the distress of breathing is not increased ; and it appears that the respiratory changes go on under the disadvantageous circumstances present as well as if no alcohol were given. BRITISH MEDICAL JOURNAL, 1863.

The conclusion from all this is, most certainly, that alcohol does not do harm in acute inflammation ; that it does not produce intoxication in persons suffering from exhausting diseases ; and that large quantities (from twelve to thirty ounces) may be given in cases which appear very unlikely to recover ; and the conviction is forced upon the observer that, in desperate cases, these large quantities of alcohol are directly instrumental in saving life, not by *exciting or stimulating to increased action, but by moderating actions already excessive.*

But while I am obliged to speak thus favourably of the use of alcohol in the treatment of disease, it may interest you if I say a few words with reference to taking alcohol in health ; and I confess my conclusions as regards giving alcohol to the young are not much at variance with those who advocate extreme temperance. My own experience leads me to believe that the majority of young healthy people would do well without alcohol ; and I believe the habitual daily consumption, by young persons, of considerable quantities of wine or beer, to be positively injurious to health. I regret to say that the *hard-working student*, politician, professional man, and busy merchant, have been advised to take, “as a regular daily allowance, a bottle of sound ordinary wine of Bordeaux”.—*The Practitioner*. I cannot judge of the effects of such a dose on people generally, but I should be sorry to take myself one-fifth of the quantity recommended ; while it is quite certain

that what would be good for the middle-aged politician, professional man, and busy merchant, might be very bad indeed for the hard-working student. Up to the age of forty very little stimulant is, as a general rule, required, and I expect most persons of average health would get on better without any. My own personal experience is this:—I was never very strong, though always able to get through a very considerable amount of physical exertion without suffering, and I have not been an idle student. I could, and believe I can now, walk twenty miles a day without fatigue. Up to the age of forty I hardly ever touched stimulants of any kind, and when I did take a little I not unfrequently got an attack of sick headache before my ordinary condition of health was resumed. Lately, however, I have found the advantage of half a tumbler of ale daily; and I can bear half a glass, and sometimes a glass of wine without suffering. I daresay as I grow older I may, like most persons, require a little more; but when in the country and, taking plenty of exercise, I feel very well and contented upon a moderate allowance of good simple food without any stimulants whatever. The experience of some members of my family who have lived to be old, and that of many persons of whom I have inquired, accords with my own. As a general rule, young healthy persons are, I believe, better without stimulants and tobacco, and those who take these things habitually and freely, get old at an earlier age than if they indulge only moderately or abstain entirely. But, at the same time, some persons do seem to require stimulants even before the age of forty; and it is occasionally necessary to allow children to take stimulants. In old age, stimulants are really *required*. I feel sure life may be much prolonged by their judicious employment, and I think that some people who have been very careful all through life, take far too little stimulant when they become old.

The contrast between the work of the early years of a professional man and that period of his life when he has achieved success and attained a position of eminence, and has perhaps become popular as a practitioner, will always be considered with interest; and in no profession is there a greater difference than in that of medicine between the days when a man commences his career and those when he begins to

reap the benefit of his early toil and self-denial. Few persons, probably, can form an accurate notion of the extended education and training to which many of us subject ourselves, and the long period of probation through which we have to pass before the actual business of our medical life can be said to begin. In many callings, payment for work may be expected almost as soon as the student period of life has been successfully completed; but with us it is far otherwise. A physician, unless placed in a very exceptional position as regards friends, fortune, and opportunity, must be content to wait many long years before he can hope to derive an income from his profession; and during the whole of this time he must work, and work almost without remuneration. If he is to attain any eminence, he must be a hard student far into life, constantly attending the hospital, and following some branch of original investigation as intently and as devotedly as if scientific inquiry was his only object in life, and, in fact, his profession.

Nor have there been wanting in our ranks many who, besides being successful practitioners, have added as much to science as others who have followed science for their calling. The *Transactions* of our Royal Society contain numerous purely scientific contributions from medical men; and I am proud to say that there are conspicuous examples in every branch of the profession; for it must not be supposed that even general practice renders impossible the attainment of eminence in science. Several memoirs of the highest merit in the *Philosophical Transactions* of the last few years are the work of scientific men who are engaged in the incessant labours of general practice; and it is much to be deplored that original investigators of such eminence are not brought more prominently forward as lecturers and teachers. Our great medical corporations have lecture-rooms which are cheerless from want of use. Hundreds of intelligent students are hungering for information. All that is required to bring about a state of things of which all who have at heart the interests of the London school of medicine most ardently desire, are funds to pay the teachers for their labour, and for the expense of illustrating their lectures. And how small a sum would be sufficient! One thousand pounds a year would give us the advantage

of the teaching of every scientific investigator in the profession, and those interested would be able to attend upwards of three hundred lectures a year. Many of my juniors, as well as seniors, will smile at the proposal. All I can say is, let the experiment be tried.

The medical profession has done, and is doing, and, it is to be hoped, will continue to do, in a quiet unobtrusive way, very much for the advancement of science; and few practitioners were more alive to the importance of the prosecution of various branches of science in connexion with medicine than Dr. Todd, who encouraged scientific work among his pupils in every way in his power. Often, during a hard day's work in London, has he spent an hour or two with pupils who were working at some original inquiry—studying, perhaps, some chemical experiment, or looking at microscopical specimens; and I have frequently observed that it was with great reluctance he tore himself away from the scientific workshop for the more pressing practical duties which he had to discharge.

It may not prove uninteresting if, before I conclude, I attempt to give a brief outline of a day's work before Dr. Todd had acquired great fame as a practical physician. Few persons are probably acquainted with the numerous duties devolving upon those who for many years of their life combine the duties of original investigator, public lecturer, and clinical teacher, with those of a practical physician; and it must always be productive of good to discover and record the successive steps by which professional success is attained, and a position of great public usefulness prepared for. Dr. Todd rose early. His morning would be occupied with seeing patients and writing. At midday, upon four days of the week, up to the year 1846, he had to go to King's College to give his lecture on Physiology, and immediately afterwards went round the wards of the hospital. After 3 P.M., he was occupied with private practice, visiting patients till the dinner-hour. Most evenings would be taken up with arranging cases, preparing his lectures for the next day, and writing. Various committee-meetings and other public appointments required his attendance on certain days; and not unfrequently he had to take a prominent part in the management of

different institutions to which he was attached. Notwithstanding all this active and regularly recurring work, he nevertheless found much time for writing; and during several of his earlier years he must have devoted many hours, by day or by night, to scientific work. Now and then, part of the evening would be spent in the society of friends, for he was eminently genial, and of a social disposition; but often has he retired and at a late hour commenced literary labours, which not unfrequently were continued far into the night. It is not possible to give an idea of the many duties which fall to the lot of a very successful physician or surgeon. To answer the letters, to attend to the business of friends which from time to time devolves upon him, to study the interests of the societies and institutions with which he may be connected, would alone be almost sufficient occupation; but such duties constitute a very small part of the day's work of the successful London physician.

Dr. Todd's powers of work were very great, and many would be astonished at the numerous engagements he would discharge in a single day. Although constantly occupied, he seldom appeared hurried; and of late years it had been often remarked, that he devoted as much care and time to the investigation of a case of disease as in his earlier years, when he had more time at his disposal.

After about the year 1852, Dr. Todd's practice became considerable; and from this time it increased to such an extent as to compel him to resign his public appointments—his professorship, as already stated, in 1853; and his duties as a clinical teacher at the close of 1859, only six weeks before his lamented death. Dr. Todd, though active, had always looked old for his age. For some time before he gave up his professorship, it was painfully manifest to his friends, and it was well known to himself, that his health was failing; but, although weak, he was able to work hard to the very last. On Monday morning, January 30th, 1860, he returned from a harassing journey into South Wales, having slept on Sunday night at Gloucester. Although feeling very ill on reaching home, he nevertheless contrived to see several patients. Early in the afternoon, however, hæmorrhage from the stomach, which had commenced on Sunday night, recurred with such increased violence as to

prostrate him completely; and he died in the evening, in his consulting room, only a few hours after the last patient had left it.

Measured by time, his life was short; but his labours were great. Few men in the same number of years have done more. A cursory examination of the literary work which Dr. Todd has left behind would lead any one to suppose that he had reached the verge of the period ordinarily allotted to man. In this place, his memory will ever be held in honour. When he came here, there were very few pupils; there was no hospital. He lived to see the medical school of King's College one of the best in this country, and remarkable as the nursery of many medical teachers and scientific investigators. Of the exceptionally distinguished staff of those days, no one contributed more largely to this result than did Robert Bentley Todd.

Erratum: for "1843", p. 7, line 2 from top, read "1833".